

REMARKS

Favorable consideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-4 are pending in the application with Claims 1 having been amended by way of the present amendment.

In the Office Action dated June 27, 2003, Claims 1, 3, and 4 were finally rejected under 35 U.S.C. § 102(b) as being anticipated by Wallin (U.S. Patent No. 3,525,912); and Claim 2 was finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Wallin in view of Rabe (U.S. Patent No. 4,296,344).

Applicants note that the Information Disclosure Statement filed on April 22, 2003 has yet to be acknowledged and hereby request said acknowledgement.

Applicants acknowledge with appreciation the personal interview between the Examiner, the Examiner's supervisor, and Applicants' representative on August 14, 2003. During the interview, the Examiners indicated that amending the independent claims to recite first and second subwindings would probably overcome the pending rejections but such an amendment would not be entered without first filing a RCE since such an amendment would require an additional search.

Claims 1 and 4 are amended to recite a first coil wire wound on bottoms of the slots of the iron core to provide an inner coil "to form a first winding, said first winding comprising a first subwinding around a first set of opposing commutator teeth and a second subwinding around a second set of opposing commutator teeth, the second set of opposing commutator

teeth being adjacent to the first set of opposing commutator teeth.” Support for this amendment is found in Applicants’ originally filed specification.¹ No new matter is added.

Briefly recapitulating, amended Claim 1 is directed to a commutator motor, comprising an iron core having a center and a plurality of open-ended teeth extending radially from the center to form a plurality of slots between the open-ended teeth, each slot configured for coil winding. A rotation shaft is inserted in a center of the iron core and a pair of first and second commutators are mounted on the rotation shaft at opposite ends of the iron core. A first coil wire is connected to the first commutator, and wound on bottoms of the slots of the iron core to provide an inner coil to form a first winding, the first winding comprising a first subwinding around a first set of opposing commutator teeth and a second subwinding around a second set of opposing commutator teeth, the second set of opposing commutator teeth being adjacent to the first set of opposing commutator teeth. A second coil wire is connected to the second commutator, and wound on the inner coil in the slots of the iron core to provide an outer coil at a side of the opened outer radial end of the slot. A first terminal is connected to a first power source to supply electric power of the first power source to the first coil wire through the first commutator. A second terminal is connected to a second power source to supply electric power of the second power source to the second coil wire through the second commutator. The diameter of the second coil wire is smaller than that of the first coil wire. The claimed windings and different wire diameters allow for improved motor efficiency, cooling, and compactness.²

Wallin teaches a motor having a rotor with two windings and two commutators, wherein the first winding is a progressive lap winding.³ While Wallin discloses that other

¹ Specification, page 7, line 4 – page 8, line 18; Figures 2A-2F.

² Specification, page 19, lines 2-12.

³ Wallin, column 5, lines 5-29, Figures 4-9.

winding patterns are possible,⁴ Wallin does not teach or suggest Applicants' claimed feature of "a first subwinding around a first set of opposing commutator teeth and a second subwinding around a second set of opposing commutator teeth, the second set of opposing commutator teeth being adjacent to the first set of opposing commutator teeth." Therefore, Applicants submit the inventions defined by Claim 1, and all claims depending therefrom, are not anticipated by the asserted prior art for at least the reasons stated above.⁵

Accordingly, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

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⁴ Wallin, column 5, line 17.

⁵ MPEP § 2142 "...the prior art reference (or references when combined) must teach or suggest **all** the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."